

LYVE-1 siRNA (m): sc-42902

BACKGROUND

Lymphatic vessel endothelial hyaluronan receptor-1 (LYVE-1) is expressed on the cell surface as a protein that is reduced by glycosidase treatment. LYVE-1 is abundant in spleen, lymph node, heart, lung and fetal liver, and is less abundant in appendix, bone marrow, placenta, muscle and adult liver. Expression of LYVE-1 is largely restricted to endothelial cells lining lymphatic vessels and splenic sinusoidal endothelial cells. LYVE-1 binds to both soluble and immobilized hyaluronan (HA) with greater specificity than HCAM. Like HCAM, the LYVE-1 molecule binds both soluble and immobilized HA. However, unlike HCAM, the LYVE-1 molecule co-localizes with HA on the luminal face of the lymph vessel wall and is completely absent from blood vessels. Hence, LYVE-1 is the first lymph-specific HA receptor to be characterized and is a uniquely powerful marker for lymph vessels themselves. LYVE-1 is used as a marker to study tumor lymphangiogenesis, which is an important area of investigation.

REFERENCES

1. Banerji, S., et al. 1999. LYVE-1, a new homolog of the CD44 glycoprotein, is a lymph-specific receptor for hyaluronan. *J. Cell Biol.* 144: 789-801.
2. Online Mendelian Inheritance in Man, OMIM[™]. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605702. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Gale, N.W., et al. 2007. Normal lymphatic development and function in mice deficient for the lymphatic hyaluronan receptor LYVE-1. *Mol. Cell Biol.* 27: 595-604.
4. Guo, B., et al. 2009. Lentivirus-mediated small interfering RNA targeting VEGF-C inhibited tumor lymphangiogenesis and growth in breast carcinoma. *Anat. Rec.* 292: 633-639.

CHROMOSOMAL LOCATION

Genetic locus: Lyve1 (mouse) mapping to 7 F1.

PRODUCT

LYVE-1 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LYVE-1 shRNA Plasmid (m): sc-42902-SH and LYVE-1 shRNA (m) Lentiviral Particles: sc-42902-V as alternate gene silencing products.

For independent verification of LYVE-1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-42902A, sc-42902B and sc-42902C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

LYVE-1 siRNA (m) is recommended for the inhibition of LYVE-1 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

LYVE-1 (E9VA4): sc-65647 is recommended as a control antibody for monitoring of LYVE-1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LYVE-1 gene expression knockdown using RT-PCR Primer: LYVE-1 (m)-PR: sc-42902-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hou, W.H., et al. 2011. CRSBP-1/LYVE-1 ligands disrupt lymphatic inter-cellular adhesion by inducing tyrosine phosphorylation and internalization of VE-cadherin. *J. Cell Sci.* 124: 1231-1244.
2. Hou, W.H., et al. 2012. CRSBP-1/LYVE-1 ligands stimulate contraction of the CRSBP-1-associated ER network in lymphatic endothelial cells. *FEBS Lett.* 586: 1480-1487.
3. Yu, M., et al. 2015. The cooperative role of S1P3 with LYVE-1 in LMW-HA-induced lymphangiogenesis. *Exp. Cell Res.* 336: 150-157.
4. Yu, M., et al. 2015. Hyaluroan-regulated lymphatic permeability through S1P receptors is crucial for cancer metastasis. *Med. Oncol.* 32: 381.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.